

Initial	Date
<i>WAE</i>	<i>2/22/13</i>
<i>CHC</i>	<i>2/22/13</i>

BA WTR
BA SD
Mail Stop 60189

FEB 22 2013

Memorandum

To: Project Leader, Lake Andes National Wildlife Refuge
From: Chief, Division of Water Resources
Subject: 2012-2013 Water Use Report/Management Plan

The subject reports for Lake Andes National Wildlife Refuge and Varilek, Sherman, Broken Arrow, and Roth Wildlife Production Areas have been reviewed and approved.

We strongly recommend that the Owens Bay Well be added to the deferred maintenance system to be replaced if it has not already been done to date. Please contact Carrie Cordova of my staff a few months prior to construction because a permit will have to be obtained from the State of South Dakota before the replacement well is constructed.

Attached is the signed approval page for your files. Thank you for submitting the report in a timely manner.

S/ MEGAN ESTEP

Attachment

bcc: WTR rf

WTR:CCordova:cc:02/22/2013
I:\WATERUSE\SD\LAKE ANDES\wateruse_12.doc

LAKE ANDES NATIONAL WILDLIFE REFUGE
COMPLEX

ANNUAL WATER MANAGEMENT PLAN
2012 WATER USE REPORT
2013 MANAGEMENT PLAN

Prepared by: Michael J. Bump

Date: 1/25/2013

Submitted: Michael J. Bump
Project Leader

Date: 1/25/2013

Approved: Bernard Britner
Regional Refuge Supervisor

Date: 2/5/2012

Concur: [Signature]
Chief, Water Resources Division

Date: 2/4/13

WATER USE REPORT/MANAGEMENT PLAN - SHORT FORM -
REPORT YEAR: 2012

STATION NAME: Lake Andes NWR MANAGING STATION: Lake Andes NWRC

WATER RIGHTS DATA

WATER RIGHT NO: 220-3 (Owens Bay Well) PRIORITY DATE: 7/6/1956
SOURCE: Dakota Sandstone artesian aquifer
WATER DIVERTED: YES X NO IMPOUNDMENTS: YES X NO
MEANS OF DIVERSION: artesian well AF STORAGE: N/A
RATE OF DIVERSION: (see below) AF SEASONAL: N/A
WELLS: YES X NO FREE FLOWING: 2.22 CFS or PUMPED: N/A
GPM
TYPE OF USE: Fish & Wildlife: X Domestic:
 Crop Irrigation: Stock:
 Other:

INSPECTION DATA

Please complete all pertinent information for ACTUAL use versus the Water Rights data.

DATE OF INSPECTION: 7/13/2012 INSPECTED BY: Edward Rodriguez
CONDITIONS AT INSPECTION: diminishing flow from well

AF STORAGE: N/A OR ESTIMATED ELEVATION: N/A
WELLS: FREE FLOWING: .50 CFS (226 GPM) OR PUMPED: N/A GPM

CONDITION OF FACILITIES: Diminished flow and a deteriorating well casing will require replacement of this well in the future.

OVERALL CLIMATIC CONDITIONS: Exceptional drought.

PROPOSED WATER PROGRAM: previous attempts to reduce flow at wellhead have caused leaking around well casing. Active management is limited.

COMMENTS: This is a free-flowing artesian well.

WATER USE REPORT/MANAGEMENT PLAN - SHORT FORM -
REPORT YEAR: 2012

STATION NAME: Lake Andes NWR MANAGING STATION: Lake Andes NWRC

WATER RIGHTS DATA

WATER RIGHT NO: 517-3 (Lake Andes) PRIORITY DATE: 4/22/1940

SOURCE: Andes Creek, Garden Valley Creek, other tributaries

WATER DIVERTED: YES NO X (no longer) IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: N/A AF STORAGE: 13,721 AF

RATE OF DIVERSION: N/A AF SEASONAL: 6,813 AF

WELLS: YES NO X FREE FLOWING: N/A GPM or PUMPED: N/A

TYPE OF USE: Fish & Wildlife: X Domestic:

 Crop Irrigation: Stock:

 Other:

INSPECTION DATA

Please complete all pertinent information for ACTUAL use versus the Water Rights data.

DATE OF INSPECTION: 7/5/2012 INSPECTED BY: Steve Spawn, Mike Bryant

CONDITIONS AT INSPECTION: Lake level was at 1435.6 (1.65' below full pool)

AF STORAGE: <20,634 AF OR ESTIMATED ELEVATION: 1439.25 amsl

WELLS: FREE FLOWING: N/A GPM OR PUMPED: N/A GPM

CONDITION OF FACILITIES: Dikes crossing Lake Andes (2) were damaged by high water in 2011. Considerable emergency repair was completed by the refuge staff; however funds are needed to restore them to their pre-flood condition.

Water control structures (WCS) were replaced during 2008. New box culverts were installed in the North and South dikes that are considerably deeper than the previous ones constructed in 1940. Plastic lumber stoplogs were used for the first time in 2009. Ice damaged the new WCS on the South dike in early 2009, requiring removal of the stoplogs at and above the waterline. Repair of the damaged structure is planned for 2013.

OVERALL CLIMACTIC CONDITIONS: Exceptional drought. Lake elevation was below full pool through the year.

PROPOSED WATER PROGRAM: No active management planned.

COMMENTS: Full pool equals 1437.25'.

Water Resources examined the potential of the Garden Creek diversion during 2007. The diversion was decommissioned ~50 years ago. Hydrologist Mark Rodney

determined that if the diversion were recommissioned it had the potential to contribute ~168 AF of water to Lake Andes in a normal year. This equates to .04' of elevation gain over the entire lake. The Charles Mix County Lake Restoration Organization, a local non-profit group, has taken on the challenge of improving water quality in the Lake Andes watershed. Volunteers collected basic water quality measurements on Lake Andes each month.

WATER USE REPORT/MANAGEMENT PLAN - SHORT FORM -
REPORT YEAR: 2012

STATION NAME: Lake Andes WMD MANAGING STATION: Lake Andes NWRC

WATER RIGHTS DATA

WATER RIGHT NO: 5250-3 (Varilek WPA) PRIORITY DATE: 12/27/1988

SOURCE: a natural slough on Varilek WPA and private land

WATER DIVERTED: YES NO X IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: N/A AF STORAGE: 139 AF

RATE OF DIVERSION: N/A AF SEASONAL: N/A

WELLS: YES NO X FREE FLOWING: N/A GPM or PUMPED: N/A

TYPE OF USE: Fish & Wildlife: X Domestic:

 Crop Irrigation: Stock:

 Other:

INSPECTION DATA

Please complete all pertinent information for ACTUAL use versus the Water Rights data.

DATE OF INSPECTION: 7/2012

INSPECTED BY: Mike Bryant

CONDITIONS AT INSPECTION: low water level

AF STORAGE: <139 AF OR ESTIMATED ELEVATION: <1614' amsl

WELLS: FREE FLOWING: N/A GPM OR PUMPED: N/A GPM

CONDITION OF FACILITIES: N/A

OVERALL CLIMACTIC CONDITIONS: Exceptional drought.

PROPOSED WATER PROGRAM: no active management

COMMENTS:

WATER USE REPORT/MANAGEMENT PLAN - *SHORT FORM* -

REPORT YEAR: 2012

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWRC

WATER RIGHTS DATA

WATER RIGHT NO: 5251-3 (Sherman WPA)

PRIORITY DATE: 12/27/1988

SOURCE: a natural slough on **Sherman WPA**

WATER DIVERTED: YES NO X

IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: N/A

AF STORAGE: 271 AF

RATE OF DIVERSION: N/A

AF SEASONAL: N/A

WELLS: YES NO X FREE FLOWING: N/A
GPM

GPM or PUMPED: N/A

TYPE OF USE: Fish & Wildlife: X

Domestic:

Crop Irrigation:

Stock:

Other:

INSPECTION DATA

Please complete all pertinent information for ACTUAL use versus the Water Rights data.

DATE OF INSPECTION: 7/2012

INSPECTED BY: Mike Bryant

CONDITIONS AT INSPECTION: high water level

AF STORAGE: <271 AF

OR

ESTIMATED ELEVATION: <1591.7' amsl

WELLS: FREE FLOWING: N/A GPM

OR

PUMPED: N/A GPM

CONDITION OF FACILITIES: N/A

OVERALL CLIMATIC CONDITIONS: Exceptional drought

PROPOSED WATER PROGRAM: no active management

COMMENTS:

WATER USE REPORT/MANAGEMENT PLAN - SHORT FORM -
REPORT YEAR: 2012

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWRC

WATER RIGHTS DATA

WATER RIGHT NO: 5077-3 (Broken Arrow WPA)

PRIORITY DATE: 10/7/1985

SOURCE: Joubert Drain

WATER DIVERTED: YES X NO

IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: Dam #7 (DU Dam)

AF STORAGE: 131.2 AF

RATE OF DIVERSION: unknown

AF SEASONAL: N/A

WELLS: YES NO X FREE FLOWING: N/A

GPM or PUMPED: N/A GPM

TYPE OF USE: Fish & Wildlife: X

Domestic:

Crop Irrigation:

Stock:

Other: Recreation X

INSPECTION DATA

Please complete all pertinent information for ACTUAL use versus the Water Rights data.

DATE OF INSPECTION: 7/2012

INSPECTED BY: Steve Spawn, Mark Heisinger

CONDITIONS AT INSPECTION: low water levels

AF STORAGE: <131.2 AF

OR

ESTIMATED ELEVATION: unknown

WELLS: FREE FLOWING: N/A GPM

OR

PUMPED: N/A GPM

CONDITION OF FACILITIES: some water control structures and the Platte Creek road crossing were damaged by high water. Repairs were made in 2011 and 2012.

OVERALL CLIMACTIC CONDITIONS: Exceptional drought. The pond behind Dam #7 was low for much of the year.

PROPOSED WATER PROGRAM: Management will retain as much water as possible.

COMMENTS: Joubert Drain also known as New Holland Drain. Dam and impoundment was inspected (Safety inspection) by a contractor in 2011.

WATER USE REPORT/MANAGEMENT PLAN - SHORT FORM -
REPORT YEAR: 2012

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWRC

WATER RIGHTS DATA

WATER RIGHT NO: 6013-3 (Roth WPA)

PRIORITY DATE: 7/30/1997

SOURCE: tributary of Dry Creek

WATER DIVERTED: YES X NO

IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: ditch plug in tributary

AF STORAGE: 323 AF

RATE OF DIVERSION: unknown

AF SEASONAL: 212 AF

WELLS: YES NO X FREE FLOWING: N/A

GPM or PUMPED: N/A GPM

TYPE OF USE: Fish & Wildlife: X

Domestic: X

Crop Irrigation:

Stock:

Other:

INSPECTION DATA

Please complete all pertinent information for ACTUAL use versus the Water Rights data.

DATE OF INSPECTION: 7/2012

INSPECTED BY: Mark Heisinger

CONDITIONS AT INSPECTION: low water level

AF STORAGE: <323 AF

OR

ESTIMATED ELEVATION: <1398.5' amsl

WELLS: FREE FLOWING: N/A GPM

OR

PUMPED: N/A GPM

CONDITION OF FACILITIES: good

OVERALL CLIMACTIC CONDITIONS: Exceptional drought

PROPOSED WATER PROGRAM: no active management planned

COMMENTS: In the fall of 2010 we received a complaint from the adjoining landowner to the south (Lance Konrad) that the plug on Roth WPA was causing a significant amount of cropland to be inundated with water especially the last few years. He stated that when the plug was installed the USFWS assured his grandfather that we would remove the plug if there were any issues. Nothing has changed since the plug was constructed in 1997. I inspected their field and will suggest to them to remove some rocks in a crossing on their property which is likely holding water on their property. MJH